CLAIMS

We claim:

1. A ceramic arc tube assembly comprising:

a hollow body having at least one open end containing an end cap, the end cap having a capillary tube and a transient assembly button, the capillary tube extending outwardly from the hollow body and having a length inserted into the open end and forming a seal with the hollow body, the transient assembly button being fixed around the capillary tube and contacting an edge of the open end, the interaction between transient assembly button and the edge of the open end determining the length of the capillary tube inserted into the open end; and

the transient assembly button being capable of removal from the capillary tube without causing damage to the arc tube assembly.

2. The ceramic arc tube assembly of claim 1 wherein the periphery of the transient assembly button extends beyond the periphery of the open end.

3. The ceramic arc tube assembly of claim 1 wherein the transient assembly button is grooved to facilitate removal.

4. The ceramic arc tube assembly of claim 1 wherein the transient assembly button is notched to facilitate removal.

5. The ceramic arc tube assembly of claim 3 wherein the groove faces the open end.

6. The ceramic arc tube assembly of claim 1 wherein the transient assembly button is an annular disc.

7. The ceramic arc tube assembly of claim 6 wherein a surface of the transient assembly button is grooved along a diameter.

8. The ceramic arc tube assembly of claim 7 wherein the grooved surface of the transient assembly button faces the open end.

9. The ceramic arc tube assembly of claim 7 wherein the depth of the groove is from about 50 percent to about 75 percent of the thickness of the transient assembly button.

10. The ceramic arc tube assembly of claim 6 wherein the transient assembly button is notched.

11. The ceramic arc tube assembly of claim 6 wherein the diameter of the transient assembly button is greater than an outer diameter of the open end.

12. The ceramic arc tube assembly of claim 1 wherein the length of the capillary tube inserted into the open end has a radially extending sealing member which forms the seal with the hollow body.

13. The ceramic arc tube assembly of claim 1 wherein hollow body has two opposed open ends each containing an end cap.

14. A ceramic arc tube assembly comprising:

a hollow cylindrical body having at least one open end containing an end cap, the end cap having a capillary tube and a transient assembly button, the capillary tube extending outwardly from the hollow body and having a length inserted into the open end, the length inserted into the open end having a radially extending sealing member forming a seal with the hollow body, a transient assembly button being fixed around the capillary tube and contacting an edge of the open end, the interaction between transient assembly button and the edge of the open end determining the length of the capillary tube inserted into the open end; and

the transient assembly button being capable of removal from the capillary tube without causing damage to the arc tube assembly.

15. The ceramic arc tube assembly of claim 14 wherein the transient assembly button is an annular disc.

16. The ceramic arc tube assembly of claim 15 wherein a surface of the transient assembly button is grooved along a diameter.

17. The ceramic arc tube assembly of claim 16 wherein the grooved surface of the transient assembly button faces the open end.

18. The ceramic arc tube assembly of claim 16 wherein the depth of the groove is from about 50 percent to about 75 percent of the thickness of the transient assembly button.

19. The ceramic arc tube assembly of claim 14 wherein the transient assembly button is notched.

20. The ceramic arc tube assembly of claim 15 wherein the diameter of the transient assembly button is greater than an outer diameter of the open end.

21. The ceramic arc tube assembly of claim 14 wherein hollow body has two opposed open ends each containing an end cap.

22. The ceramic arc tube of claim 14 wherein the sealing member is formed as an integral part of the capillary.

23. A method of making a ceramic arc tube comprising the steps of:

(a) fixing a transient assembly button around a capillary tube to form an end cap;

(b) inserting the end cap into an open end of a hollow arc tube body until the transient assembly button contacts an edge of the open end;

(c) heating the assembly to form a mechanical seal between the capillary tube and the open end of the hollow body;

(d) removing the transient assembly button without damaging the assembly; and

(e) sintering the assembly to form the ceramic arc tube.

24. The method of claim 23 wherein the transient assembly button is fixed to the capillary tube by heating at or below about 1350°C.

25. The method of claim 23 wherein the assembly is heated at or below about 1350°C to form the mechanical seal.

26. The method of claim 23 wherein the hollow body in step (b) has two opposed open ends having end caps inserted therein and in step (c) the capillary tube of each end cap is sealed simultaneously to the respective open end.

27. The method of claim 25 wherein the assembly is sintered at a temperature above about 1800°C in a hydrogen-containing atmosphere.

28. A method of making a ceramic arc tube comprising the steps of:

(a) fixing a transient assembly button and a sealing member around a capillary tube to form an end cap;

(b) inserting the sealing member of end cap into an open end of a hollow arc tube body until the transient assembly button contacts an edge of the open end;

(c) heating the assembly to form a mechanical seal between the sealing member and the open end of the hollow body;

(d) removing the transient assembly button without damaging the assembly; and

(e) sintering the assembly to form the ceramic arc tube.

29. The method of claim 28 wherein the transient assembly button is fixed to the capillary tube by heating at or below about 1350°C.

30. The method of claim 29 wherein the assembly is heated at or below about 1350°C to form the mechanical seal.

31. The method of claim 30 wherein the assembly is sintered at a temperature above about 1800°C in a hydrogen-containing atmosphere.

32. The method of claim 23 wherein the capillary tube is subjected to a thermal pretreatment to densify the capillary tube prior to step a).

33. The method of claim 28 wherein the capillary tube is subjected to a thermal pretreatment to densify the capillary tube prior to step a).